Title	Association of a genetic polymorphism in the gene encoding fibrinogen beta chain with hypertension in Hong Kong Chinese
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Association of a genetic variant in the adiponectin gene with persistent hypertension in Hong Kong Chinese

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Introduction: We have previously found that low plasma adiponectin level was predictive of the development of hypertension in our local Chinese population. In this study, we investigated the associations of genetic variants in the adiponectin gene with plasma adiponectin level and hypertension.

Methods: A total of 14 single nucleotide polymorphisms (SNPs) were genotyped by the MassARRAY system (Sequenom, San Diego, CA) in 1936 subjects from the Hong Kong Cardiovascular Risk Factor Prevalence Study–2 (CRISPS-2). Plasma adiponectin level was measured by an in-house sandwich enzyme-linked immunosorbent assay in 1650 subjects.

Results: Plasma adiponectin level was significantly associated with four SNPs, rs12495941 (beta=0.100, P<0.0001), rs182052 (beta= –0.095, P<0.0001), -10677C>T (beta=0.067, P=0.0017), and rs266729 (beta= –0.071, P=0.0008). These SNPs were not associated with prevalent or incident hypertension among all the 1936 subjects. However, the SNP rs266729 was significantly associated with hypertension (odds ratio=1.49; 95% CI, 1.13-1.95; P=0.0044) and diastolic blood pressure (beta=0.113, P=0.018) in a sub-cohort of 1616 subjects who were normotensive or hypertensive for the whole 6.4-year follow-up period. In this sub-cohort, this SNP (odds ratio=1.39, P=0.020) was independently associated with hypertension in stepwise logistic regression. No significant sex interaction was found for the SNP with adiponectin level and hypertension.

Conclusion: Several genetic variants in the adiponectin gene influenced plasma adiponectin levels in our population and the SNP 266729 was associated with persistent hypertension in this population. Further studies on the role of genetic variants in hypertension are warranted.

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Introduction: Elevated plasma fibrinogen level is associated with cardiovascular diseases. Two prospective studies in Caucasian populations showed positive association of plasma fibrinogen level with incident hypertension in men, but not in women. Single nucleotide polymorphisms (SNPs) in the gene encoding the fibrinogen beta chain (*FGB*) have been reported to be associated with plasma fibrinogen level. We therefore investigated the association of genetic variants in the *FGB* gene with hypertension.

Methods: Three tagging SNPs were genotyped in subjects from the Hong Kong Cardiovascular Risk Factor Prevalence Study cohort with a median follow-up period of 6.4 years. Genotyping was performed by the MassARRAY system (Sequenom, San Diego, CA) in 1294 subjects who had plasma fibrinogen level measured.

Results: The SNP rs4220 showed significant association with plasma fibrinogen level (beta=0.144, P<0.001 at baseline and beta=0.130, P<0.001 at follow-up). This SNP was also significantly associated with hypertension (odds ratio=1.49, P=0.004 at baseline and odds ratio=1.32, P=0.013 at follow-up). Among subjects without hypertension at baseline, this SNP was associated with incident hypertension in men (odds ratio=1.52, P=0.023), but not in women. This SNP showed a marginal non-significant sex interaction for incident hypertension (P=0.076).

Conclusion: As SNP rs4220 in the *FGB* gene is associated with both fibrinogen level and hypertension, fibrinogen may play a causal role in the development of hypertension development, especially in men.

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